In the Drawings:

Applicants are submitting a proposed correction for original FIG. 1. Newly proposed FIG. 1 corrects a mistake regarding the diffraction orders for detector element 6.3 by deleting a duplicate list of diffraction orders for detector element 6.3. In addition, the diffraction orders for detector element 6.2 are added.

The additions have been indicated in red ink. Furthermore, it is not believed that the corrections involve new matter. Accordingly, please indicate whether the corrections are acceptable in the next Office Action.

REMARKS

A. Objections to Form

1. Objection to Drawings

In the Office Action mailed on July 14, 2005, the drawings were objected to for having the diffraction orders (-1, +1, 0)/(+1, -1, +2) being used to designate both the 0° and 120° phase shift signals. Applicants traverse the objection in that FIG. 1 shows that the diffraction orders (-1, +1, 0)/(+1, -1, +2) only designate the 0° phase shift signal. Accordingly, the objection is improper and should be withdrawn.

Note that Applicants are proposing an amendment to FIG. 1 wherein a mistake regarding the diffraction orders for detector element 6.3 is corrected. In particular, FIG. 1 shows the diffraction orders for detector element 6.3 twice. The proposed amendment deletes one of the duplicate sets of diffraction orders for detector element 6.3. In addition, the diffraction orders for detector element 6.2 are added.

2. Objection to Specification

The Abstract of the Disclosure was objected to for exceeding the 150 word limit. The Abstract of the Disclosure has been amended so as to contain less than 150 words. Accordingly, the objection has been overcome and should be withdrawn.

3. Objection to Claims

Claim 13 was objected to for using the word "scanning" instead of "scale." In view of the present amendment of claim 13 that replaces "scanning" with "scale," the objection has been overcome and should be withdrawn.

Since the above-mentioned amendment to claim 13 corrects an obvious and inadvertent error, the amendment is not related to patentability as defined in *Festo Corporation v. Shoketsu Kinzoku Kogyo Kabushiki Co., Ltd*, 234 F.3d 558, 56 USPQ2d 1865 (Fed. Cir. 2000) (*en*

banc), *overruled in part*, 535 U.S. 722 (2002).

B. 35 U.S.C. § 103

1. Michel et al., Takamiya et al. and Brake

a. Claims 1-4 and 6

Claims 1-4 and 6 were rejected under 35 U.S.C. § 103 as being obvious in view of Michel et al., Takamiya et al. and Brake. Applicants traverse this rejection. In particular, claim 1 recites an interferential position measuring arrangement wherein the beam of rays emitted by the light source are receives by a scale grating prior to reaching a scanning grating. The Office Action has relied on Michel et al.'s measuring instrument 0 shown in Fig. 1 to reject the claims. However, measuring instrument 0 has the light 1 reaching a scanning plate prior to reaching a scale grating 4 which is in an order that is opposite to that recited in claim 1. Since Takamiya et al. and Brake do not disclose nor suggest altering Michel et al. so that light 1 reaches a scale grating prior to reaching a scanning grating, the rejection is improper and should be withdrawn.

b. Claims 16-19, 21, 29 and 30

Claims 16-19, 21, 29 and 30 were rejected under 35 U.S.C. § 103 as being obvious in view of Michel et al., Takamiya et al. and Brake. Applicants traverse this rejection. In particular, claim 16 recites an interferential position measuring arrangement wherein the beam of rays emitted by the light source are receives by a scale grating prior to reaching a scanning grating. As mentioned above in Section B.1.a, Michel et al.'s measuring instrument 0 shown in Fig. 1 has the light 1 reaching a scanning plate prior to reaching a scale grating 4 which is in an order that is opposite to that recited in claim 16. Since Takamiya et al. and Brake do not disclose nor suggest altering Michel et al. so that light 1 reaches a scale grating prior to reaching a scanning grating, the rejection is improper and should be withdrawn.

2. **Michel et al., Takamiya et al., Brake and Michel et al. ('457)**

a. **Claims 5 and 7**

Claims 5 and 7 were rejected under 35 U.S.C. § 103 as being obvious in view of Michel et al., Takamiya et al., Brake and Michel et al. ('457). Applicants traverse this rejection. Claims 5 and 7 depend indirectly on claim 1. As pointed above in Section B.1.a, Takamiya et al. and Brake do not disclose nor suggest altering Michel et al. so that light 1 reaches a scale grating prior to reaching a scanning grating. Michel et al. ('457) does not cure the deficiencies of Takamiya et al. and Brake since it does not suggest altering Michel et al. so that light 1 reaches a scale grating prior to reaching a scanning grating. Accordingly, the rejection is improper and should be withdrawn.

b. **Claims 20 and 22**

Claims 20 and 22 were rejected under 35 U.S.C. § 103 as being obvious in view of Michel et al., Takamiya et al., Brake and Michel et al. ('457). Applicants traverse this rejection. Claims 20 and 22 depend indirectly on claim 16. As pointed above in Section B.1.b, Takamiya et al. and Brake do not disclose nor suggest altering Michel et al. so that light 1 reaches a scale grating prior to reaching a scanning grating. Michel et al. ('457) does not cure the deficiencies of Takamiya et al. and Brake since it does not suggest altering Michel et al. so that light 1 reaches a scale grating prior to reaching a scanning grating. Accordingly, the rejection is improper and should be withdrawn.

3. **Michel et al., Takamiya et al., Brake and Huber ('128)**

a. **Claim 8**

Claim 8 was rejected under 35 U.S.C. § 103 as being obvious in view of Michel et al., Takamiya et al., Brake and Huber ('128). Applicants traverse this rejection. Claim 8 depends

directly on claim 1. As pointed above in Section B.1.a, Takamiya et al. and Brake do not disclose nor suggest altering Michel et al. so that light 1 reaches a scale grating prior to reaching a scanning grating. Huber ('128) does not cure the deficiencies of Takamiya et al. and Brake since it does not suggest altering Michel et al. so that light 1 reaches a scale grating prior to reaching a scanning grating. Accordingly, the rejection is improper and should be withdrawn.

b. Claim 23

Claim 23 was rejected under 35 U.S.C. § 103 as being obvious in view of Michel et al., Takamiya et al., Brake and Huber ('128). Applicants traverse this rejection. Claim 23 depends directly on claim 16. As pointed above in Section B.1.b, Takamiya et al. and Brake do not disclose nor suggest altering Michel et al. so that light 1 reaches a scale grating prior to reaching a scanning grating. Huber ('128) does not cure the deficiencies of Takamiya et al. and Brake since it does not suggest altering Michel et al. so that light 1 reaches a scale grating prior to reaching a scanning grating. Accordingly, the rejection is improper and should be withdrawn.

4. Michel et al., Takamiya et al., Brake, Huber ('128) and Meyer et al.

a. Claim 9

Claim 9 was rejected under 35 U.S.C. § 103 as being obvious in view of Michel et al., Takamiya et al., Brake, Huber ('128) and Meyer et al.. Applicants traverse this rejection. Claim 9 depends directly on claim 8. As pointed above in Section B.3.a, Takamiya et al., Brake and Huber ('128) do not disclose nor suggest altering Michel et al. so that light 1 reaches a scale grating prior to reaching a scanning grating. Meyer et al. does not cure the deficiencies of Takamiya et al., Brake and Huber ('128) since it does not suggest altering Michel et al. so

that light 1 reaches a scale grating prior to reaching a scanning grating. Accordingly, the rejection is improper and should be withdrawn.

b. Claim 24

Claim 24 was rejected under 35 U.S.C. § 103 as being obvious in view of Michel et al., Takamiya et al., Brake, Huber ('128) and Meyer et al.. Applicants traverse this rejection. Claim 24 depends directly on claim 23. As pointed above in Section B.3.b, Takamiya et al., Brake and Huber ('128) do not disclose nor suggest altering Michel et al. so that light 1 reaches a scale grating prior to reaching a scanning grating. Meyer et al. does not cure the deficiencies of Takamiya et al., Brake and Huber ('128) since it does not suggest altering Michel et al. so that light 1 reaches a scale grating prior to reaching a scanning grating. Accordingly, the rejection is improper and should be withdrawn.

5. Michel et al., Takamiya et al., Brake and Cited Art

a. Claim 13

Claim 13 was rejected under 35 U.S.C. § 103 as being obvious in view of Michel et al., Takamiya et al., Brake and Applicants' cited art. Applicants traverse this rejection. Claim 13 depends directly on claim 1. As pointed above in Section B.1.a, Takamiya et al. and Brake do not disclose nor suggest altering Michel et al. so that light 1 reaches a scale grating prior to reaching a scanning grating. Applicants' cited art does not cure the deficiencies of Takamiya et al. and Brake since it does not suggest altering Michel et al. so that light 1 reaches a scale grating prior to reaching a scanning grating. Accordingly, the rejection is improper and should be withdrawn.

b. **Claim 28**

Claim 28 was rejected under 35 U.S.C. § 103 as being obvious in view of Michel et al., Takamiya et al., Brake and Applicants' cited art. Applicants traverse this rejection. Claim 28 depends directly on claim 16. As pointed above in Section B.1.b, Takamiya et al. and Brake do not disclose nor suggest altering Michel et al. so that light 1 reaches a scale grating prior to reaching a scanning grating. Applicants' cited art does not cure the deficiencies of Takamiya et al. and Brake since it does not suggest altering Michel et al. so that light 1 reaches a scale grating prior to reaching a scanning grating. Accordingly, the rejection is improper and should be withdrawn.

6. **Michel et al., Takamiya et al., Brake and Huber ('546)**

Claim 14 was rejected under 35 U.S.C. § 103 as being obvious in view of Michel et al., Takamiya et al., Brake and Huber ('546). Applicants traverse this rejection. Claim 14 depends directly on claim 1. As pointed above in Section B.1.a, Takamiya et al. and Brake do not disclose nor suggest altering Michel et al. so that light 1 reaches a scale grating prior to reaching a scanning grating. Huber ('546) does not cure the deficiencies of Takamiya et al. and Brake since it does not suggest altering Michel et al. so that light 1 reaches a scale grating prior to reaching a scanning grating. Accordingly, the rejection is improper and should be withdrawn.

7. **Michel et al., Takamiya et al., Brake, Huber ('546), Michel ('457)**

Claim 15 was rejected under 35 U.S.C. § 103 as being obvious in view of Michel et al., Takamiya et al., Brake, Huber ('546) and Michel et al. ('457). Applicants traverse this rejection. Claim 15 depends directly on claim 14. As pointed above in Section B.6, Takamiya et al., Brake and Huber ('546) do not disclose nor suggest altering Michel et al. so that light 1

reaches a scale grating prior to reaching a scanning grating. Michel et al. ('457) does not cure the deficiencies of Takamiya et al., Brake and Huber ('546) since it does not suggest altering Michel et al. so that light 1 reaches a scale grating prior to reaching a scanning grating. Accordingly, the rejection is improper and should be withdrawn.

8. Michel et al., Takamiya et al., Brake and Hercher

Claim 31 was rejected under 35 U.S.C. § 103 as being obvious in view of Michel et al., Takamiya et al., Brake and Hercher. Applicants traverse this rejection. Claim 31 depends directly on claim 16. As pointed above in Section B.1.b, Takamiya et al. and Brake do not disclose nor suggest altering Michel et al. so that light 1 reaches a scale grating prior to reaching a scanning grating. Hercher does not cure the deficiencies of Takamiya et al. and Brake since it does not suggest altering Michel et al. so that light 1 reaches a scale grating prior to reaching a scanning grating. Accordingly, the rejection is improper and should be withdrawn.

C. New Claims 32 and 36

New claims 32 and 36 depend directly on claims 1 and 16, respectively, and so are patentable for at least the reasons set forth in Sections B.1.a-b. Claims 32 and 36 are patentable for the additional reason that neither Michel et al., Takamiya et al. nor Brake disclose or suggest having Michel et al. generate the particular diffraction orders for the recited six partial beams.

Since claims 32 and 36 are being presented to provide additional coverage for the inventions of claims 1 and 16, respectively, the claims are not being presented for reasons related to patentability as defined in *Festo*.

D. New Claim 33

New claim 33 depends directly on claim 32 and so is patentable for at least the reasons set forth in Section C. Claim 33 is patentable for the additional reason that neither Michel et al., Takamiya et al. nor Brake disclose or suggest having Michel et al. use a detection arrangement with a phase grating that splits light in the diffraction orders recited in the claim.

Since claim 33 is being presented to provide additional coverage for the invention of claim 1, the claim is not being presented for reasons related to patentability as defined in *Festo*.

E. New Claims 34 and 37

New claims 34 and 37 depend directly on claims 1 and 16, respectively, and so are patentable for at least the reasons set forth in Sections B.1.a-b. Claims 34 and 37 are patentable for the additional reason that neither Michel et al., Takamiya et al. nor Brake disclose or suggest having Michel et al. use a scanning plate with opaque areas that generate the particular diffraction orders recited in the claims. Note that Takamiya et al. describes two separate scanning gratings 5a and 5b that do not correspond to the recited scanning structure.

Since claims 34 and 37 are being presented to provide additional coverage for the inventions of claims 1 and 16, respectively, the claims are not being presented for reasons related to patentability as defined in *Festo*.

F. New Claims 35 and 38

New claims 35 and 38 depend directly on claims 13 and 28, respectively, and so are patentable for at least the reasons set forth in Sections B.5.a-b. Claims 35 and 38 are patentable for the additional reason that neither Michel et al., Takamiya et al. nor Brake

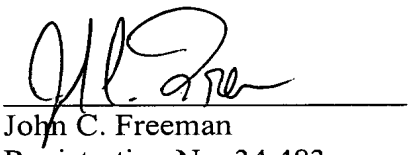
disclose or suggest having Michel et al. generate the recited beam and the beam waist with the properties recited in the claims.

Since claims 35 and 38 are being presented to provide additional coverage for the inventions of claims 13 and 28, respectively, the claims are not being presented for reasons related to patentability as defined in *Festo*.

CONCLUSION

In view of the arguments above, Applicants respectfully submit that all of the pending claims 1-38 are in condition for allowance and seeks an early allowance thereof. If for any reason, the Examiner is unable to allow the application in the next Office Action and believes that an interview would be helpful to resolve any remaining issues, he is respectfully requested to contact the undersigned attorneys at (312) 321-4200.

Respectfully submitted,



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Dated: November 3, 2005

Annotated Marked-up Drawings

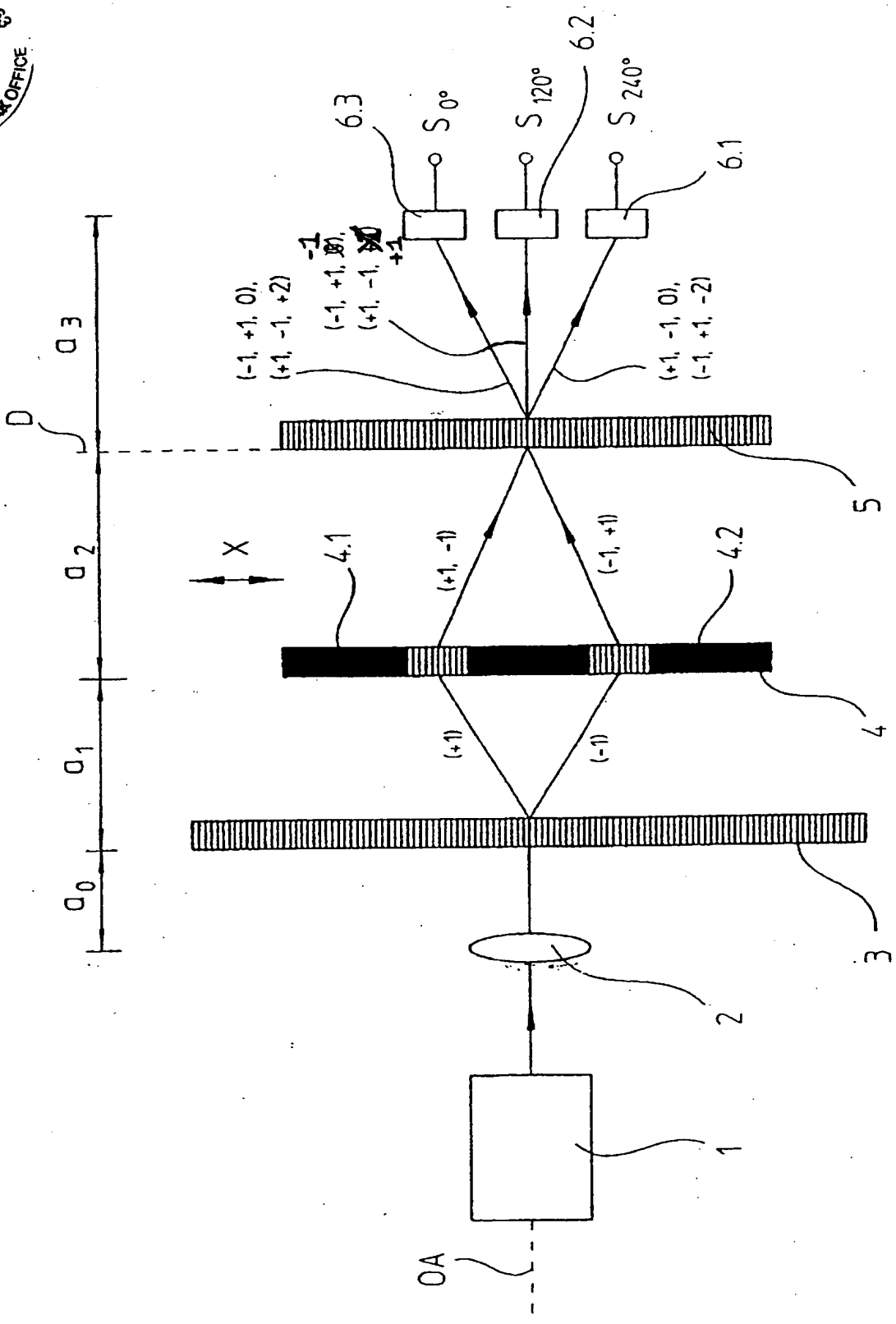

FIG. 1